



US Army Corps  
of Engineers ®



# ***LITTLE ROCK DISTRICT STUDIES AFFECTING FEDERAL HYDROPOWER***

*Hydropower Conference June 10, 2008*

————— *One Corps Serving The Army and the Nation* —————



US Army Corps  
of Engineers ®



---

# ***Impaired Waterbody Listing 303 (d)***

## ***Dardanelle, Bull Shoals, Norfork***

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

## ***Impaired Waterbody Listing***

---



- Arkansas Dept of Environmental Quality has 303(d) listed (on their 2004 List of Impaired Water Bodies):
  - the first 2.0 miles below Dardanelle
  - the first 3.0 miles below Bull Shoals
  - the first 4.2 miles below Norfork
- Impairment is dissolved oxygen
- Per ADEQ, Source is hydropower

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

## ***Impaired Waterbody Listing***

---



### **Little Rock District Position-**

- Full listing of the sources contributing to the low DO has not been identified.
- Options identified are costly.
- Consider re-evaluation of state standard or designated use of stream.

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

## ***Impaired Waterbody Listing***

---



- **Current Status-**
- ADEQ preparing Total Maximum Daily Load for Bull Shoals and Norfork.
- Draft TMDL expected in June 2008.
- Public Comment comment period will follow.
- 303(d) Listing requires TMDL preparation within 13 years; does not require implementation.

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®



---

# *Questions?*

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®



---

# *WHITE RIVER MINIMUM FLOWS STUDY*

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***WHITE RIVER MINIMUM FLOWS STUDY***

---



## **FY2006 Energy & Water Act-**

Directed the Corps of Engineers to Reallocate storage within Bull Shoals and Norfolk Lakes to be used to maintain minimum flows for the downstream trout fishery in the following amounts:

Bull Shoals Lake (BS-3)	5 feet
Norfolk Lake (NF-7)	3.5 feet

BS-3 is a flood pool reallocation, NF-7 has 1.75 feet reallocated from conservation pool and 1.75 feet from flood pool.

Beaver Lake, Table Rock Lake and Greers Ferry Lake were De-Authorized under Sect 132(C) of the 2006 Energy and Water Development Appropriation's Act.

*One Corps Serving The Army and the Nation*





US Army Corps  
of Engineers ®

# ***WHITE RIVER MINIMUM FLOWS STUDY***



---

## **Current Schedule**

Initial Funding	Spring 01
Alternative Formulation Briefing	20 NOV 03
Draft Report	AUG 08
National Environmental Policy Act Documentation	AUG 08
Record of Decision signing and NEPA Completion	DEC 08
Project Partnering Agreement Signing	May 09

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***WHITE RIVER MINIMUM FLOWS STUDY***

---



## **Current Status-**

- Have Received Implementation Guidance from SWD
- Initiating Final Feasibility and Proceeding into Engineering and Design
- SWPA is working to complete the Draft Federal Hydropower Offset and FERC Licensee Buyout.
- Environmental Impact Statement will be publicly reviewed August 2008.

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®



---

# *Arkansas River Navigation Project*

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# *Arkansas River Navigation Project*



---

## **Study Purpose/Background-**

- Feasibility study began in March 2000.
- 100% federally funded.

Study to examine two opportunities:

✓I - Improve navigation by improving the efficiency and effectiveness of evacuating high flows out of Oklahoma reservoirs.

✓II – Improve navigation by deepening the channel on the entire system and widening the Verdigris

River. — *One Corps Serving The Army and the Nation* —



US Army Corps  
of Engineers ®

# *Arkansas River Navigation Project*



---

## **Current Status**

- Construction Funds provided in FY05 and Executed in FY06 and FY07
- All funds have been expended
- No additional funds are anticipated to be received

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®



---

# *WHITE RIVER BASIN COMPREHENSIVE STUDY*

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***White River Basin Comprehensive Study***

---



- Authorized by WRDA 1986
- Authorized Assessment of Water Resources needs of River Basins and Watersheds
  - Ecosystem restoration & protection
  - Flood damage reduction
  - Navigation & ports
  - Watershed protection
  - Water supply
  - Drought preparedness

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***White River Basin Comprehensive Study***

---



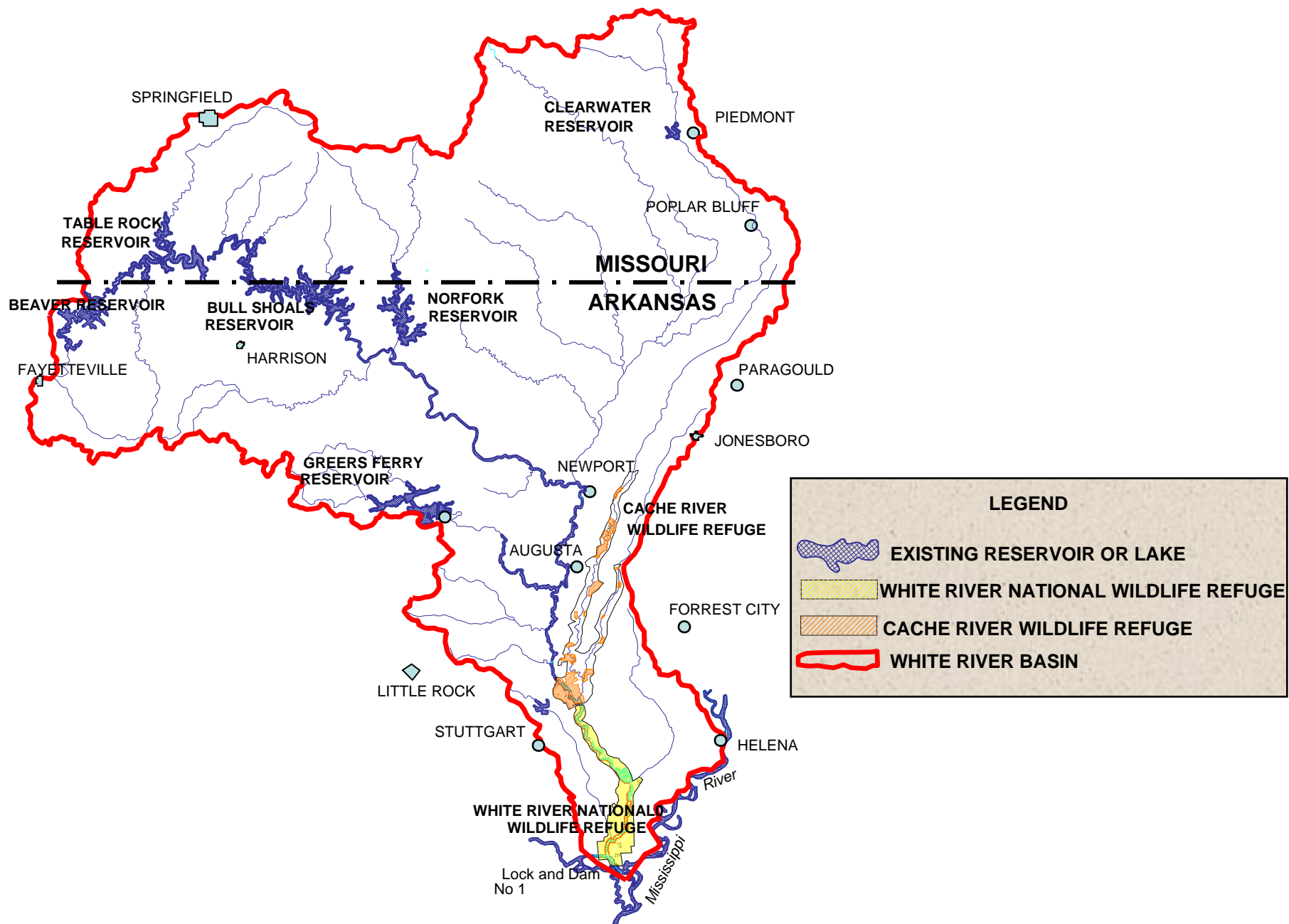
- FY 2001- funds were included the Presidents budget, work began
- May 2002- Federal Cost Share Agreement Signed
- WRDA 2007 Reduced Non-Federal Cost Share from 50% to 25%
- Study involves both Memphis District and Little Rock District Corps of Engineers

---

*One Corps Serving The Army and the Nation*

---





## ***WHITE RIVER BASIN, AR & MO***



US Army Corps  
of Engineers ®

# *White River Basin Comprehensive Study*

---



Will:

- Inventory & forecast critical resources in the basin
  - Existing, future, & natural ecosystem conditions
- Identify water resources related problems & opportunities
- Propose solutions and identify benefits and impacts
- Develop a watershed management plan

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# *White River Basin Comprehensive Study*

---



## Sponsors

- Arkansas Game & Fish Commission
- Arkansas Natural Heritage Commission
- Arkansas Natural Resources Commission
- Arkansas Waterways Commission
- Missouri Department of Conservation
- Missouri Department of Natural Resources
- The Nature Conservancy of Arkansas

---

*One Corps Serving The Army and the Nation*

---

# ***White River Basin Comprehensive Study***

ITEM	% COMPLETE	STATUS
Cache River Basin Studies	-	Fully funded contract with URS
<i>Study - Blockage Removal @ Grubbs, AR</i>	<i>50</i>	<i>Study complements sedimentation study by Corps H&amp;H Branch</i>
<i>Study-Evaluate Environmental Benefits of Sediment Reduction</i>	<i>90</i>	<i>Big Creek Sub-Basin</i>
<i>Evaluate Ecosystem Restoration Options</i>	<i>30</i>	<i>Cache River and Bayou DeView Basins</i>
Forebay Oxygen Diffuser Report	10	Initiated FY08 on Table Rock Lake; Work promoted by MO Dept. of Conservation
Sedimentation Study	5	Will initiate soon; NRCS submitting Big Creek data
Water Quality Analysis - Upper White River	50	FY07 work complete; D&F at MVD for similar FY08 work for MO DNR

# ***White River Basin Comprehensive Study***

ITEM	% COMPLETE	STATUS
Conceptual Model	100	
Beaver Lake Water Quality Model	100	2-D Study
Delineate & Digitize Hydrologic Units	100	
Fisheries Study	95	Final report due from ERDC
Recreation Study, Phase I	85	ERDC completing report; will finalize early 2008
Unsteady Flow Model	35	Mouth to Clarendon complete; Newport next
Cache River Surveys	100	Completed 15 cross sections

# ***White River Basin Comprehensive Study***

ITEM	FY08	FY09	FY10	FY11	FY12
Coordination & Data Acquisition	X	X	X	X	X
Aquatic Ecosystems Sub-Basin Assessments	X	X			
Watershed Restoration Plans	X	X			
Hydrological Effects on Wetlands (King)			X	X	
Surveys, Cross Sections		X			
Hydraulic Modeling Efforts	X	X			
Terrestrial Habitat Evaluation			X		
Wetlands Evaluation			X		
Migratory Birds Evaluation			X		
Endangered / Threatened Species Evaluation			X		
Evaluation of Permanent Wetlands				X	
Ecosystem Restoration Options (Heitmeyer Study)	X	X	X		

# ***White River Basin Comprehensive Study***

ITEM	FY08	FY09	FY10	FY11	FY12
Navigation / Transportation Needs				X	
People and Economy			X		
Recreation	X	X	X	X	
Groundwater / Agricultural Water Supply		X			
Water Supply / Wastewater Treatment		X			
GIS			X	X	
Hydropower / Power Generation Needs				X	
Flood Control Assessment			X	X	
Water Quality	X	X	X	X	X
Hydrodynamic Models				X	
Aquatic Ecosystem Fishery Studies	X				
Planning and Project Management	X	X	X	X	X

# ***White River Basin Comprehensive Study***

- Federal Funding-

- FY 07 Appropriation \$600,000
- FY 08 Appropriation \$140,000
- No Funding in FY 09 President's Budget



# ***White River Basin Comprehensive Study***

## **Sponsor Funding Status**

Update Cost Share Agreement  
Stakeholder meeting

July 2008  
Sep 2008



US Army Corps  
of Engineers ®



---

# *Water Supply Storage Reallocations*

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

## ***Reallocations Current Status***



- **Carroll/Boone Water District** (Beaver Lake, 11,504 AF) – EA Being Prepared at SWL
- **Benton/Washington County Water Association** (Beaver Lake, 15,258 AF) – Under Review @ SWD/HQ
- **City of Mountain Home** (Norfork Lake, 3,158 AF) – Being Prepared at SWL
- **City of Clinton** (Greers Ferry Lake, 2.5 MGD) – New Request Being Prepared at SWL
- **City of Heber Springs** (Greers Ferry Lake, 3,538 AF) – Approved, Agreement Sent to City for Signature

————— *One Corps Serving The Army and the Nation* —————



US Army Corps  
of Engineers ®

## ***Reallocations Current Status Cont'd***



- Greers Ferry, MAWA ( 18,730 AF) – Under Review @ SWD/HQ
- Lake Ouachita, MAWA (33,303 AF) – Under Review @SWD/HQ
- Beaver Trout Hatchery (21,972 AF) – Pending at HQUSACE
- Baxter County Water Works Facilities Board (Norfork Lake, 5.8MGD) Being prepared at SWL
- Searcy County Regional Water District – Greers Ferry Lake, (5,000 AF ) – Being prepared at SWL
- Ozark Mountain Water Alliance (12 MGD) - Bull Shoals Lake – Being Prepared at SWL

————— *One Corps Serving The Army and the Nation* —————



US Army Corps  
of Engineers ®

# *Norfolk Stilling Basin Aeration*

---



- Floating aeration plant is on hold.
- BlueInGreen will run tests with the trailer-mounted SDOX system this summer.

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***Greers Ferry Modified Seasonal Pool***

---



- 1998- Agreement Drafted Between Corps and SWPA
  - Hold Pool at elevation 463 from 1 April to 1 October
- 1999- Draft Agreement Put On hold Due to White River Minimum Flow Study
- 2000 thru 2006- Temporary Deviations Allowed to el 462.5
- 2007- No deviation allowed due to possible impact on tree damage litigation on the White River

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®

# ***Greers Ferry Modified Seasonal Pool***

---



- Greers Ferry has been removed from the White River Minimum Flows Project
- Once litigation is cleared, SWPA and the Corps may restart the re-allocation study
- Corps currently has no funds to resume re-allocation study

---

*One Corps Serving The Army and the Nation*

---



US Army Corps  
of Engineers ®



---

# *Questions?*

---

*One Corps Serving The Army and the Nation*

---